Fact Sheet
July
2002

Propellant Burn Area Interim Soil Remedial Action Plan

Aerojet-McDonnell Douglas Inactive Rancho Cordova Test Site

Rancho Cordova, California

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Introduction

This fact sheet provides information regarding the Department of Toxic Substances Control's (DTSC) proposed cleanup of dioxin and perchlorate-impacted soils at the Inactive Rancho Cordova Test Site (IRCTS). The IRCTS is located approximately 15 miles east of Sacramento in a rural area of south Rancho Cordova, California. DTSC has prepared a draft ***Propellant Burn Area Soil Interim Remedial Action Plan (PBA-IRAP)*** and a proposed California Environmental Quality Act (***CEQA***) ***Negative Declaration*** to remediate shallow impacted soils at the Propellant Burn Area (PBA) in the north central portion of the IRCTS. This fact sheet also provides information on the PBA history, background, public involvement, information repositories, contacts for additional information and the IRCTS mailing list. Terms highlighted in ***Bold Italics*** are defined in the Glossary.

In addition, this fact sheet contains information on the Beta and Circular Feature areas where DTSC found no soil contamination. As a result, DTSC recommends no further action for the soil in these areas.

Public Comment Period	**Public Meeting**
The Public Comment Period begins on July 24, 2002 **Ends on August 26, 2002**	**August 1, 2002** **7:00 PM**
Please send written comments to: **Mr. Gene Riddle** **8800 Cal Center Drive** **Sacramento CA 95826**	**Mitchell Middle School Library** **2100 Zinfandel Drive** **Rancho Cordova CA 95670**
The Mitchell Middle School Library is accessible to persons with disabilities. If accomodation for the meeting is needed, please call Nathan Schumacher at (916) 255-3650 by July 30, 2002.	

Site History

The PBA occupies about 8 acres. It is located within the north central portion of the IRCTS (Please see Figure 1). The Aerojet-General Corporation and the McDonnell Douglas Corporation (a wholly owned subsidiary of The Boeing Company since 1998) used the PBA for the incineration of waste rocket propellant and/or laboratory chemicals from 1957 to 1963. The PBA is located within an isolated and rugged area of dredge tailings and, except for cattle grazing has not been used since the mid-1960s.

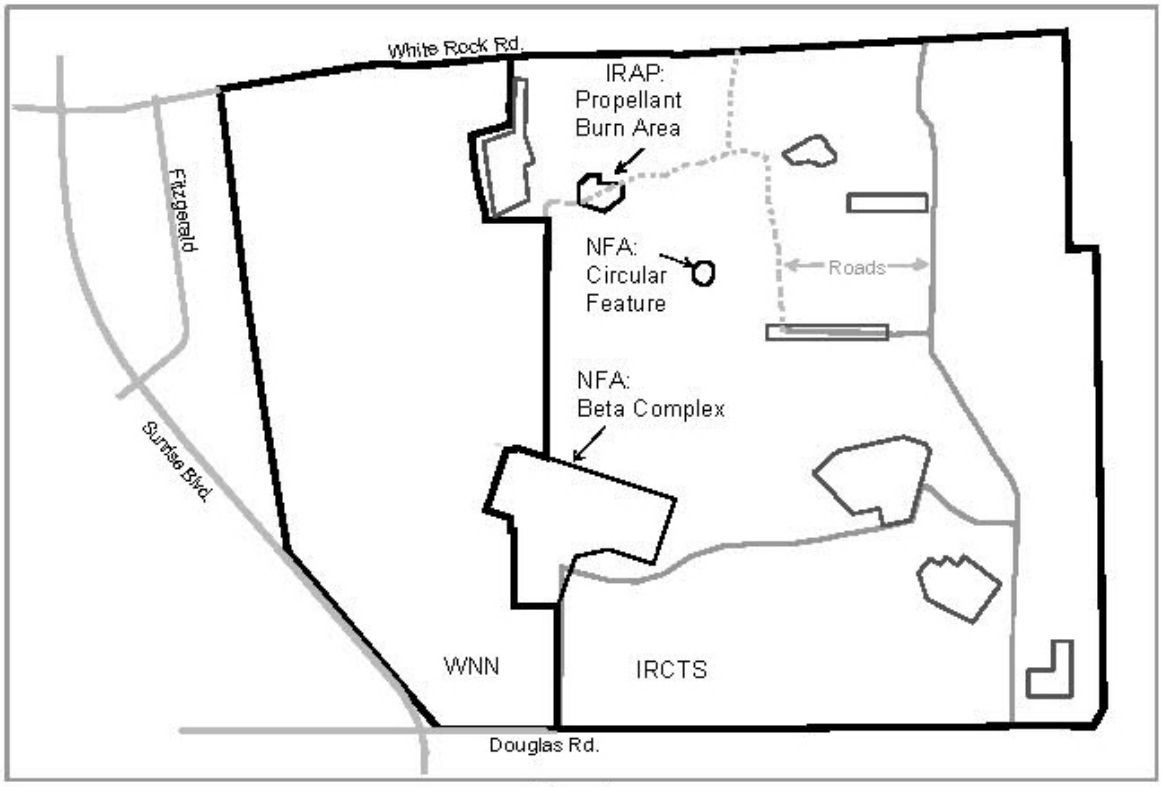

Figure 1
IRCTS Location Map

The 4000-acre IRCTS was used primarily by McDonnell Douglas to test several rocket propulsion systems for various aerospace programs between 1956 and 1969. Solid rocket motors were handled in two small test complexes in the northeastern portion of the IRCTS and liquid rocket engines were tested and maintained in four complexes on the south side of the IRCTS. From 1969 to 1977, the IRCTS was inactive. From 1977 to 1984, McDonnell Douglas leased or sold portions of the former Administration Area (Security Park) to other businesses. In 1984, Aerojet acquired the remainder of the IRCTS.

DTSC issued an Imminent and Substantial Endangerment and Remedial Action Order to Aerojet and McDonnell Douglas in 1991, requiring the companies to investigate and remediate soil and groundwater contamination at the IRCTS. A 1994 Imminent and Substantial Determination and Consent Order that further clarified the regulatory requirements subsequently replaced the 1991 Order. Under these Orders, Aerojet and McDonnell Douglas have conducted various remedial investigations to determine the nature and extent of contamination at various study areas within the IRCTS, including the PBA.

Remedial Investigation

Starting in 1992 and continuing into 1998, Aerojet and McDonnell Douglas conducted several investigations to assess the depth and breadth of various chemicals that were released to the soil and groundwater at the PBA. During these investigations, soil borings, soil vapor monitoring wells, and groundwater monitoring wells were installed at various depths. Soil, ***soil gas***, and groundwater samples were collected for chemical analysis of ***volatile and semi-volatile organic compounds (VOCs and SVOCs), polychlorinated biphenyls (PCBs),***

polychlorinated dibenzofurans/dioxins (dioxins), metals, and perchlorate.

Analytical results for soil samples show that dioxins/furans and perchlorate are present in the shallow soil at concentrations exceeding regulatory levels. Metals, SVOCs, and PCBs were not found at significant concentrations or were not detected in the shallow soils. Perchlorate and VOCs, primarily ***trichloroethene (TCE)***, were found in deeper soil samples and in groundwater samples; and will be subject to further evaluation. Dioxin-impacted soils were defined by the laboratory analysis of 93 shallow soil samples from 42 locations. The dioxin concentrations ranged up to 3 parts per billion (ppb) with an average of about 0.16 ppb. The PBA action level is 0.01 ppb for dioxins in soil. Dioxin concentrations exceeding this level affect about 3,500 cubic yards of soil, located from a depth of one to eight feet below ground surface (at an average depth of two feet).

Perchlorate-impacted soils were defined by the laboratory analysis of 113 shallow soil samples from 41 locations. The perchlorate concentrations ranged up to 250 parts per million (PPM) with an average of 35 PPM in the 51 samples. The PBA action level is 39 PPM for perchlorate in soil. Perchlorate concentrations above this standard affect about 3,600 cubic yards of shallow soil, located from the surface to 15 feet below ground surface.

Total contaminated shallow soil at the PBA is 7100 cubic yards spread over less than one acre. Dioxin and perchlorate are the only contaminants that DTSC proposes to remove and treat at the PBA. Please see Figure 2 for locations of all the areas investigated in the PBA. Remedial Investigation sample results show that the Beta and Circular Feature areas contain no soil contamination. As a result, there is no risk to public health or the environment. Reports on the Beta and Circular Feature areas are available for public review at the information repository listed on page 6.

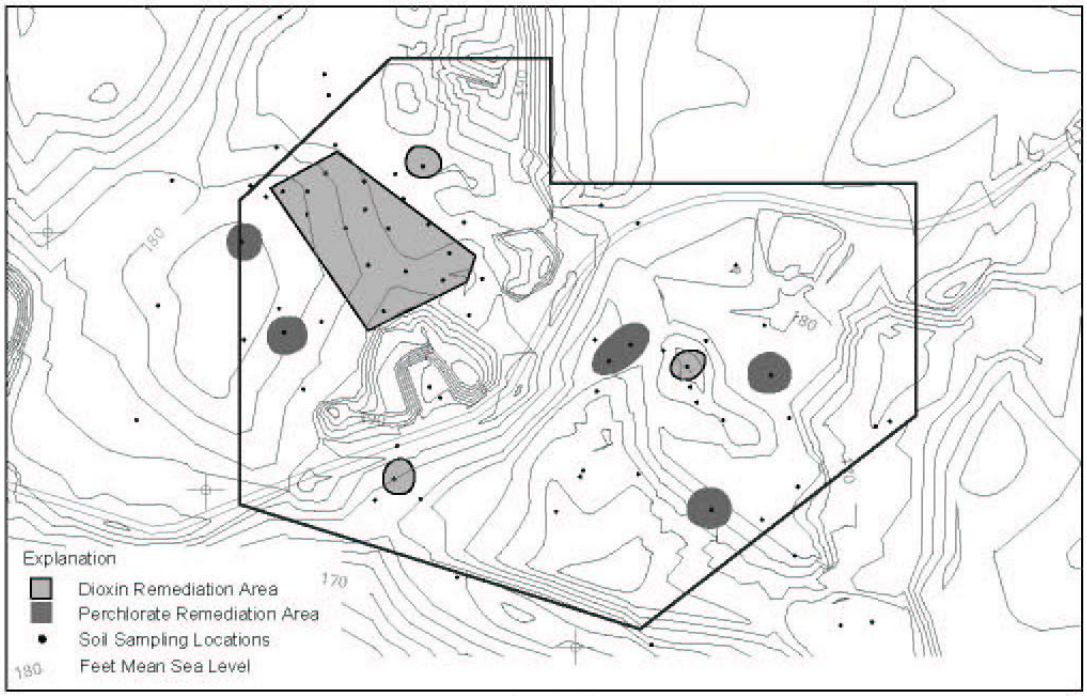

Figure 2
Location of Soil Remediation
at the Propellant Burn Area

Draft Interim Remedial Action Plan

How was the plan developed?

Prior to the development of the draft PBA-IRAP, a **feasibility study (FS)** was prepared to evaluate potential alternatives to address the dioxin and perchlorate-contaminated soils at the Propellant Burn Area. DTSC and the Central Valley Regional Water Quality Control Board (RWQCB) approved the FS in 2001.

Four alternatives were considered for the remediation of the shallow PBA soils. The alternatives are:

A) no action,
B) excavation with off-site disposal,
C) excavation with off-site disposal of dioxin-contaminated soils and on-site "***composting"*** of perchlorate-contaminated soils (***bacterial decomposition of perchlorate***),
D) excavation with on-site disposal of dioxin-contaminated soils during the closure of a former Sacramento County municipal dump on the IRCTS, and on-site composting of perchlorate-contaminated soils to biologically destroy the perchlorate.

These remedial alternatives were evaluated using the nine federal criteria, as modified by the State of California. The criteria include:

- Protection of human health and the environment;
- Compliance with applicable or relevant and appropriate regulations;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, and/or volume through treatment;
- Short-term effectiveness;
- Implementability;
- Cost;
- Community Acceptance; and
- State Acceptance.

DTSC considers the no action alternative to be unacceptable because leaving the dioxin and perchlorate-contaminated soils in place would pose a threat to human health and the perchlorate would continue to migrate to groundwater. Moreover, the no action alternative allows soils to exceed health protective standards and was therefore rejected from further consideration.

DTSC considers the excavation and removal of the impacted soils to be appropriate to protect human health. The disposal of both dioxin and perchlorate-impacted soil at an off-site landfill was less attractive since perchlorate affected about half of the soil mass and could be easily degraded by naturally occurring bacteria. The on-site disposal of the dioxin-impacted soils was not attractive because it is unclear whether Sacramento County would accept the responsibility of adding them to its proposed landfill closure.

What remedial alternative does DTSC propose?

The proposed alternative is excavation of dioxin-impacted soils with disposal at a permitted hazardous waste landfill, with excavation and on-site composting of perchlorate-contaminated soil (Alternative C).

When will the work occur?

DTSC anticipates that the shallow dioxin and perchlorate-impacted soil cleanup will be completed during the summer of 2003.

Public Involvement

DTSC has a Public Participation Plan (PPP) for the IRCTS and uses this PPP as a guide for all public involvement activities regarding the IRCTS. The PPP and other documents are available for review at the DTSC information repository (see box on page 6). The draft PBA-IRAP and proposed CEQA Negative Declaration are subject to public review and comment.

Public Comment Period and Public Meeting Schedule

DTSC is requesting public comments on the draft PBA-IRAP and the proposed CEQA Negative Declaration. The public comment period begins on July 24, 2002 and ends on August 26, 2002. Comments must be postmarked by August 26, 2002. Written comments should be submitted to:

Gene Riddle, DTSC Project Manager
8800 Cal Center Drive
Sacramento, CA 95826

DTSC will hold a public meeting to discuss the draft PBA-IRAP and the proposed CEQA Negative Declaration. DTSC staff will answer questions and receive oral and written comments at a 7 PM meeting on August 1, 2002 at Mitchell Middle School Library, 2100 Zinfandel Drive, Rancho Cordova CA 95670. DTSC will respond in writing to all comments prior to finalizing the PBA-IRAP.

CEQA Negative Declaration

In accordance with California Environmental Quality Act, an ***Initial Study*** was prepared to evaluate the potential environmental impacts that may result from the implementation of the final PBA-IRAP. DTSC has determined that implementing the final PBA-IRAP is unlikely to produce any significant impacts to public health or the environment, making an Environmental Impact Report unnecessary. Therefore, DTSC has proposed a Negative Declaration for the PBA-IRAP.

Glossary of Terms

Bacterial Decomposition of Perchlorate/"Composting": Naturally occurring bacteria utilize oxygen atoms in the perchlorate molecule to digest organic carbon that has been added to the perchlorate-contaminated soil. Organic carbon can be derived from steer manure, sawdust, alfalfa, corn syrup, alcohol, sodium acetate, and other sources.

CEQA Initial Study and Negative Declaration: Document that describes the evaluation of potential environmental impacts of the proposed remedial action relative to a standard list of criteria. If the action does not create an adverse environmental impact, a Negative Declaration can be issued for the action.

Feasibility Study: Document that describes the evaluation of remedial action alternatives relative to the nine federal criteria, as modified by the State, and other site specific conditions.

Metals: Natural elements found in soils and in a variety of industrial products that can be toxic at elevated concentrations.

Perchlorate: An oxidizer chemical in solid rocket propellant. According to the California Department of Health Services, "the public health concern about Perchlorate reflects its ability to interfere with the thyroid gland's uptake of iodine to produce thyroid hormones. Thyroid hormones are required for normal body metabolism, as well as for normal prenatal and postnatal development and growth." The U.S. EPA continues conducting further analysis to better understand the health impacts of Perchlorate.

Polychlorinated dibenzofurans/dioxins (dioxins): A group of generally toxic organic compounds that may be formed as a result of incomplete combustion. Dioxins may occur during the incineration of compounds containing chlorine or may occur as impurities in chemical products. The skin and the gastrointestinal tract rapidly absorb dioxins.

Polychlorinated biphenyls (PCBs): A group of toxic hydrocarbon oils that were previously used as insulation in electrical transformers since the oils were not flammable.

Remedial Action Plan (RAP): Document that describes the remedy for contaminants in the environment, including historical and scientific information on the site and contamination, and the process used to select the remedy. ***Interim Measure (IM)***: Initial action to address the contamination in shallow soils. Additional work will address the alternatives for deeper soils.

Semi-volatile organic compounds (SVOCs): A diverse group of chemicals that do not easily evaporate. Used in a variety of industrial operations.

Soil Gas: Air that fills the open spaces in soil, which can be comprised of oxygen, nitrogen, carbon dioxide, methane, water vapor, and possibly volatile organic compounds.

Trichloroethene (TCE): A volatile, degreasing agent for metal parts that was used at the various IRCTS complexes. TCE is the most common soil vapor contaminant at the IRCTS, is known to cause cancer, and is the most commonly found industrial chemical in groundwater in the United States.

Volatile organic compounds (VOCs): A group of chemicals, including solvents such as TCE, that readily evaporate at temperature normally found at the ground surface and at shallow depths. They are used in a variety of industrial operations.

Information Repository

You may review a copy of the draft PBA-IRAP, the proposed CEQA Negative Declaration, the PPP, and other related documents at the following repository:

California Environmental Protection Agency
DTSC Sacramento Office File Room
8800 Cal Center Drive
Sacramento, CA 95826
Contact: Alberta McMurray, (916) 255-3758

Information Contacts

If you need additional information or have questions, please contact Nathan Schumacher, Public Participation Specialist, at (916) 255-3650 or Gene Riddle, Project Manager, at (916) 255-3601. If you are a member of the news media, please contact Ron Baker at (916) 324-3142.

Notice to Hearing Impaired Individuals

TDD users can obtain additional information about this Fact Sheet by using the California State Relay Service (1-888-877-5378) and asking to reach Nathan Schumacher at (916) 255-3650.